

Doctor Information Leaflet



The Virus:

Parvovirus B19 (B19) is a member of the Parvoviridae family. It is the causative agent of erythema infectiosum, commonly known as the fifth disease of childhood or slapped cheek syndrome. B19 infection can be asymptomatic. However, when symptoms are present, they usually include rash, arthralgia and fever.

B19 targets erythroid progenitor cells in the bone marrow. The viral particles enter the cells via the erythroid P-antigen. Viral replication in these cells causes a cessation of erythropoiesis, which can lead to anaemia. The virus is neutralised by the production of IgM antibodies and life long immunity is conferred by the production of IgG antibodies.

Complications in pregnancy:

Maternal B19 infection occurs in approximately 1 in every 400 pregnancies. There is a 33% transmission rate from mother to fetus with 10% resulting in fetal loss. The highest risk for pregnant, sero-negative women is during epidemics and following exposure to infected children in the home. Symptoms may include arthralgia, flu-like symptoms and/or rash.

Consequences of B19V infection for the fetus include the following:

• Fetal Anemia:

- B19 preferentially infects, replicates in and causes destruction of erythroid cells
- The reduction of erythrocytes causes fetal anemia
- Anemia is an underlying factor in the development of hydrops and can lead to fetal loss

• Non-immune hydrops fetalis (NIHF):

- B19 infection induces severe anemia which leads to NIHF
- The most common form of hydrops is NIHF (~75% of cases)
- 10-20% of cases of idiopathic NIHF are B19-associated
- Hydrops usually occurs 2-3 weeks after maternal B19 infection
- On average, there is a 10% risk of hydrops following B19 infection

• Fetal Loss:

- Up to 10% of B19 infections during pregnancy are associated with fetal loss
- IgM antibodies are present in 90% of patients approximately 2 weeks after infection.
- IgM levels can peak around 30 days post-infection and may last up to 4 months.
- IgG antibodies start to appear after 3-4 weeks and most probably persist for life.

Treatment:

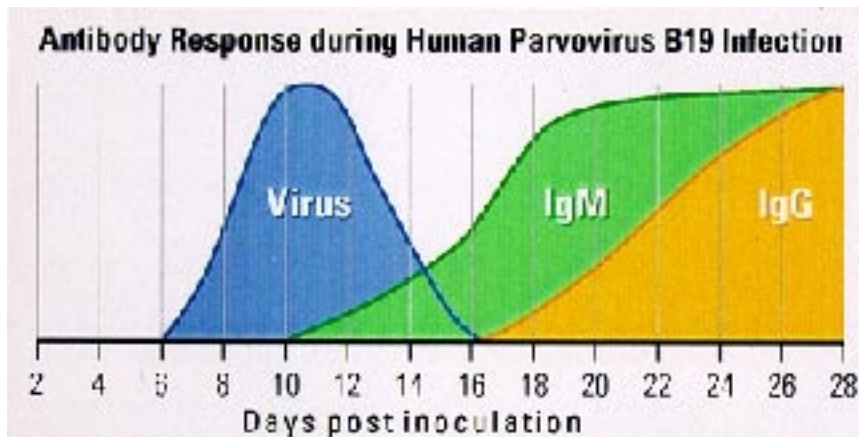
- High titre immunoglobulin treatment has been shown to be effective against the virus
- The clinical manifestations of B19 infection can also be treated through intrauterine transfusion

- The majority of fetal losses due to B19 infection occur in the 2nd trimester
- Fetal death usually occurs 4-6 weeks post infection but have been reported up to 12 weeks after symptomatic infection

Diagnosis:

Screening patients for their B19 antibody status will identify a patient at risk of infection. A variety of diagnostic assays are available to detect the presence of IgM and IgG antibodies in serum.

The B19 Antibody Response:



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